



000024672

ACTION DESCRIPTION MEMORANDUM

FOR

POND B-5 DISCHARGE TO UPPER CHURCH DITCH

ROCKWELL INTERNATIONAL
Aerospace Operations
Rocky Flats Plant
Golden, Colorado

Operating Contractor
U S. Department of Energy
Rocky Flats Area Office

Approved/Date.

Reviewed for
Classification

FPM _____

SA _____

RCRA/CERCLA _____

Legal _____

EM _____

By _____

Date _____

0115243

ADMIN RECCRD
A-DU06-000555

11/13

1 0 CONCISE DESCRIPTION OF PROPOSED ACTION

1 1 Purpose of the Action

The purpose of this action is to provide an alternative discharge pathway for water currently in the Rocky Flats Plant holding pond B-5. This water would normally be discharged to the South Walnut Creek drainage system for ultimate flow to Great Western Reservoir. Under this proposed action, an interim discharge path would be constructed and used which would discharge the water into Upper Church Ditch for ultimate flow to Upper Church Lake.

1 2 Need for the Proposed Action

A spill of chromic acid originated in a production area at the Rocky Flats Plant the evening of February 22 and morning of February 23, 1989. Chromic acid overflowed a waste tank, breached secondary containment of a surrounding berm and of the building floor, and leaked undetected through the berm and floor to a footing drain. The material then was automatically pumped to the Rocky Flats Plant onsite sanitary waste treatment system and discharged as treated sanitary effluent to the Plant B-3 holding pond for subsequent spray irrigation to lands on plantsite. Spray irrigation is performed under requirements of the Plant Environmental Protection Agency (EPA) National Pollutant Discharge Elimination System (NPDES) permit. Runoff from spray irrigation operations carried chromic acid contaminated water to the Plant holding pond B-5. Under the NPDES permit, discharge from Pond B-5 would be to South Walnut Creek, with ultimate flow to Great Western Reservoir. Great Western Reservoir serves as part of the drinking water supply for the City of Broomfield.

Although water quality tests have indicated that the water in Pond B-5 is within U. S. Environmental Protection Agency (EPA) drinking water standards for chromium, the City of Broomfield has indicated that they do not want this water discharged to Great Western Reservoir (Appendix A). The proposed action would provide an alternate route of discharge to Upper Church Ditch, which would result in subsequent flow of the discharged water to Upper Church Lake, rather than to Great Western Reservoir. Jefferson County, which owns Upper Church Lake, has indicated that they would consider accepting the water in Upper Church Lake.

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1 3 The Type of Action (program policy, or project)

The action proposed is a short-term, once-only project. It is expected to take about 14 days to install appropriate pumps and conduit for the new discharge pathway. At current Pond B-5 loading (~14 million gallons, increasing at about 110 thousand gallons per day, barring significant precipitation events), it is estimated that it will take about 20 - 25 days to complete the discharge.

1 4 The Class of Action (legislative or administrative)

The action proposed would be a local, Plant-specific operation.

1 5 The Type of Energy Technology

No energy technology is involved with the proposed action.

1 6 The Size of the Action

The action would involve discharge of approximately 14 million gallons of water over about a 20-25 day period at a cost of about \$30,000 - \$50,000 for pump and pipe installation. About 1 mile of pipe is required for pumping over a 100 foot rise to Upper Church Ditch.

2 0 LOCATION OF THE ACTION

The proposed action is located at the Rocky Flats Plant, in northern Jefferson County, 16 miles northwest of downtown Denver, Colorado. Appendix B shows the location of the Rocky Flats Plant in relation to surrounding communities and the location of Pond B-5, South Walnut Creek, Great Western Reservoir, the Upper Church Ditch, and Upper Church Lake. Upper Church Lake is located at the Jefferson County Airport and governed by the Jefferson County Airport Authority.

3.0 POTENTIAL ISSUES

Potential issues associated with the proposed action are primarily associated with legal requirements and liabilities and political relations with the City of Broomfield and Jefferson County. The City of Broomfield has indicated strong opposition to receiving the water in Great Western Reservoir, which serves as part of Broomfield's drinking water supply; Jefferson County has indicated that they would consider receiving it in Upper Church Lake, which is not used as a drinking water supply. The water proposed for discharge meets EPA drinking water standards for chromium.

and poses no measurable adverse health impact potential to humans or the environment

3.1 Required Approvals

Several approvals would be required from various governmental agencies before this option could be implemented. The Denver Water Board would have to approve of any disposition of Pond B-5 water other than the routine release to Great Western Reservoir because under the Rocky Flats Plant water supply contract that Board retains dominion over all water removed from the Denver raw water supply and its subsequent uses. The City of Broomfield owns all affected surface water runoff rights on Walnut Creek and is aware of, and has verbally approved of, the impacts of the proposed action. Written approval from the City of Broomfield still would be required. EPA approval would be required because the discharge would involve a discharge point different from the one specified in the Plant's current NPDES permit. The governing board of the Jefferson County Airport would have to give its formal approval to their receiving the water at Upper Church Lake. Courtesy notification would be given to the Jefferson County Health Department and the Colorado Department of Health.

3.2 Potential Civil Liabilities

The proposed discharge to Upper Church Ditch would involve potential civil liabilities for the Rocky Flats Plant. These potential liabilities include: 1) Potential liability for any damage that might result to Upper Church Ditch, 2) Potential liability from possible flooding of Jefferson County Airport land in the event of significant precipitation while Upper Church Lake contains Pond B-5 water, 3) Potential liability should hazardous materials from Upper Church Lake leak into other water supplies. Even though Pond B-5 water is within drinking water limits, it is possible that Upper Church Lake would contain hazardous materials from other sources, and Rocky Flats Plant could be held liable for damage from these other sources, 4) As an extension of issue 3, Rocky Flats Plant could be considered a potentially-responsible party for clean up activities of Upper Church Lake under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) by virtue of the Plant's having put water into Upper Church Lake.

3.3 Archaeological and Historic Sites

This action would not affect archeological and historic sites

3 4 Farmlands Floodplains Wetlands, and Recreational Areas

There are no farmlands or recreational areas that use this water. The diversion will not affect those uses. Wetlands exist downstream of Pond B-5 on Walnut Creek. The flows in Walnut Creek are intermittent and this one-time diversion would not affect those wetlands adversely. The major reason for this diversion is to relieve the water pressure on Pond B-5 dam so that the floodplain is protected from a catastrophic failure of the dam. This proposed action will not have an adverse affect on floodplains.

3 5 Rare and Endangered Species

The bald eagle and the black-footed ferret are the two species listed by the U S Fish and Wildlife Service as species of concern in this area. Neither species will be affected by this action.

3 6 Construction

This action includes the purchase and installation of equipment, as indicated below.

- 1) A gasoline-driven, 8-cylinder, automotive-type pump motor will be used to drive a water pump at a pump rate of 600-900 gallons per minute. The pump will be seated on the ground at the spillway of Pond B-5. The 6-inch intake for the Pond B-5 water will be floated and screened to reduce intake of sediment.
- 2) Approximately one-mile of 6-inch diameter polyvinylchloride (PVC) pipe of gasketed, slip-jointed construction will be laid above-ground, following existing contours, from Pond B-5 to the Upper Church Ditch. The pipeline will be anchored in place with steel fenceposts at approximately 100-foot intervals.
- 3) Thrusts from all bends and angles will be resisted by a combination of fence posts, sandbags, and cast-in-place concrete thrust blocks.
- 4) The pipeline will cross two water courses. Upper Walnut Creek Ditch, over which the pipeline will be trestled using telephone poles; and Church/McKay Ditch, where the crossing will be routed through steel carrier pipe.

- 5) The pipeline will cross one unpaved service road. Ten-inch diameter corrugated metal pipe with a compacted road base ramp will be used to route the PVC pipe over the service road so that vehicles may continue to use the road.
- 6) Discharge into Upper Church Ditch will be through a precast, end-capped concrete structure having a side discharge to dissipate water flow momentum and to control erosion of the Ditch.
- 7) If necessary, the site will be illuminated using either onsite electric power at Pond B-5 dam or portable, gas-driven lighting plants.

Major new equipment and supplies which must be procured for this proposed action will include "1 mile of 6" diameter PVC pipe, gasoline to operate the pump motor and any needed lighting plants; 12-gauge wire and fenceposts for securing the pipe, ten-inch diameter steel pipe to serve as a PVC pipe casing for crossing Church/McKay Ditch, ten-inch diameter corrugated metal pipe with a compacted road base material to ramp traffic over the unpaved service road; a precast, end-capped concrete discharge structure, and concrete for in-place casting.

3.7 Air Quality

The primary potential air quality concern associated with the proposed action would be resuspension of plutonium-contaminated soil caused by construction activities. Construction is limited to the inlet and outlet structure and small concrete thrust blocks along the pipeline. These structures are in areas where plutonium in soil concentrations would be near background levels. No measurable impacts to air quality are expected from this action.

3.8 Water Quality

As indicated previously, Pond B-5 water is within EPA drinking water limits for chromium concentrations and no measurable occupational or public health or environmental impacts are expected from this proposed action as a result of water quality considerations.

3.9 Occupational Protection

Installation of pumps, piping, and support structures will involve hazards normally associated with such construction requirements at the Plant. No unusual occupational hazards are expected as a result of this proposed action.

3 10 Erosion

Site construction vehicular traffic will be limited to avoid rutting and erosion of vehicular tracks

3 11 Waste Management

No radioactive or toxic wastes will be generated as a result of this proposed action. No significant quantities of non-radioactive, non-hazardous solid waste are expected to be generated

3 12 Environmental Restoration

The pipeline will cross over the recent alluvial sediments in Walnut Creek. These sediments have been designated as an area that needs to be investigated for possible clean up purposes. The pipeline will not disturb these sediments. No significant impact on Rocky Flats Plant Environmental Restoration activities is expected as a result of this proposed action.

4 0 HEALTH, SAFETY AND ENVIRONMENT REQUIREMENTS

All construction, installation, operation, discharge, sampling, and analysis activities performed in conjunction with this proposed action will be done according to requirements of the Rocky Flats Plant Health, Safety and Environment Department.

APPENDIX A

LETTER FROM THE CITY OF BROOMFIELD
TO ROCKY FLATS PLANT
INDICATING THAT THE CITY OF BROOMFIELD
DOES NOT WANT TO ACCEPT POND B-5 WATER



City of Broomfield

OFFICE OF THE CITY MANAGER

NUMBER SIX GARDEN OFFICE CENTER • BROOMFIELD COLORADO 80020 • PHONE (303) 469 3301

March 21, 1989

Albert E. Whiteman, Area Manager
U.S. Department of Energy
Rocky Flats Area Office
P.O. Box 928
Golden, Colorado 80402-0928

Mr. Dominick Sanchini, President
Rockwell International
Rocky Flats Plant
P.O. Box 464
Golden, Colorado 80402-0464

Re: Chromium Release

Gentlemen:

As a follow up to our meeting last week, I have discussed the situation with our Mayor and City Council. The purpose of this letter is to inform you that any release of the contaminated pond water into Walnut Creek or Great Western Reservoir is unacceptable. Even if you have diluted the chromium to get it below drinking water standards, it remains above historical levels.

To preserve public confidence in the drinking water supply, every effort must be taken to be sure that the reservoir remains above suspicion. As I indicated to you, we are willing to consider letting you use the Upper Church Ditch to convey the water into the airport reservoir. If you wish to pursue this alternative, please contact Mary Thurber or myself. Under no circumstances should the water be released into Great Western Reservoir.

Sincerely,

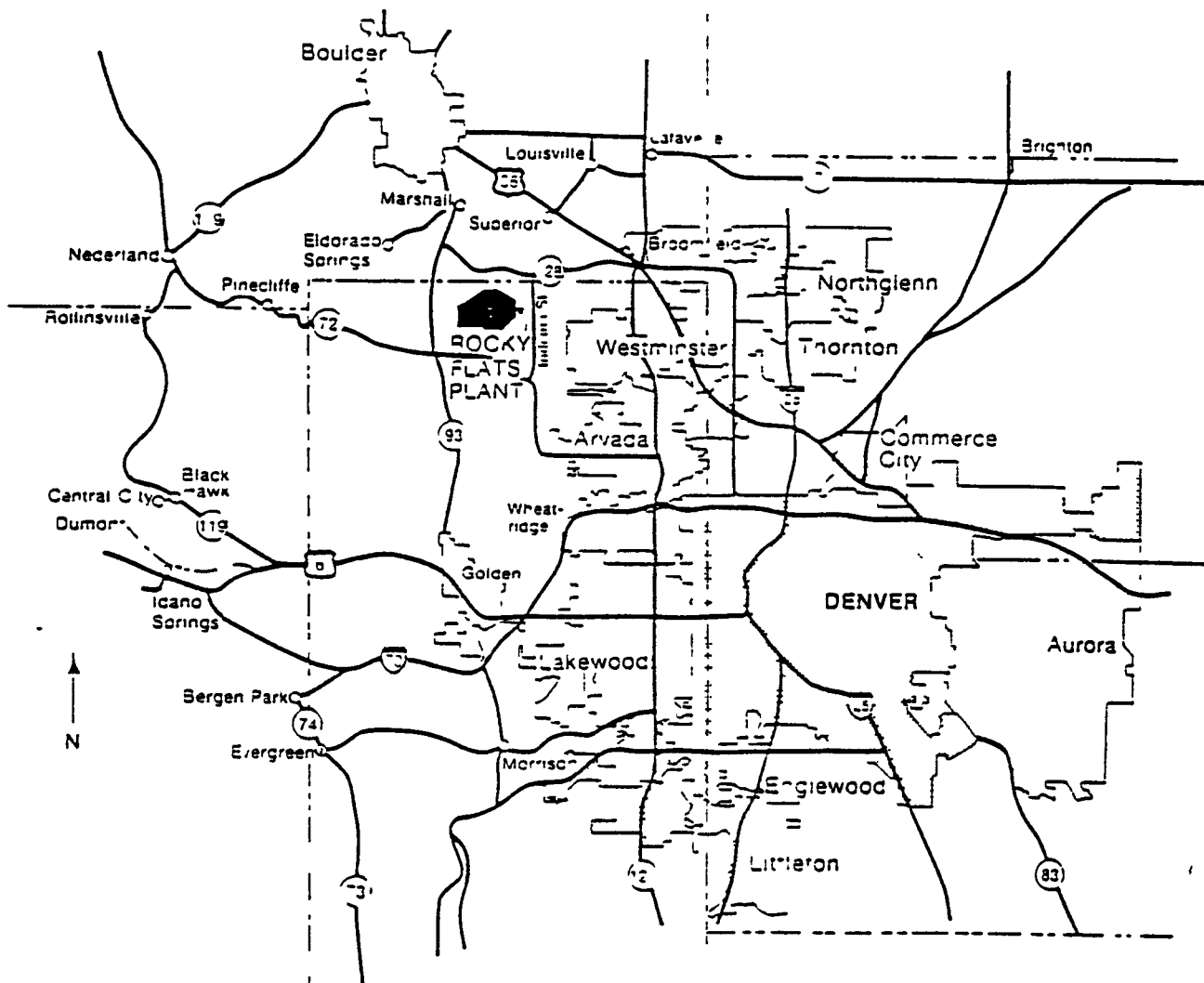
George Di Ciero
City Manager

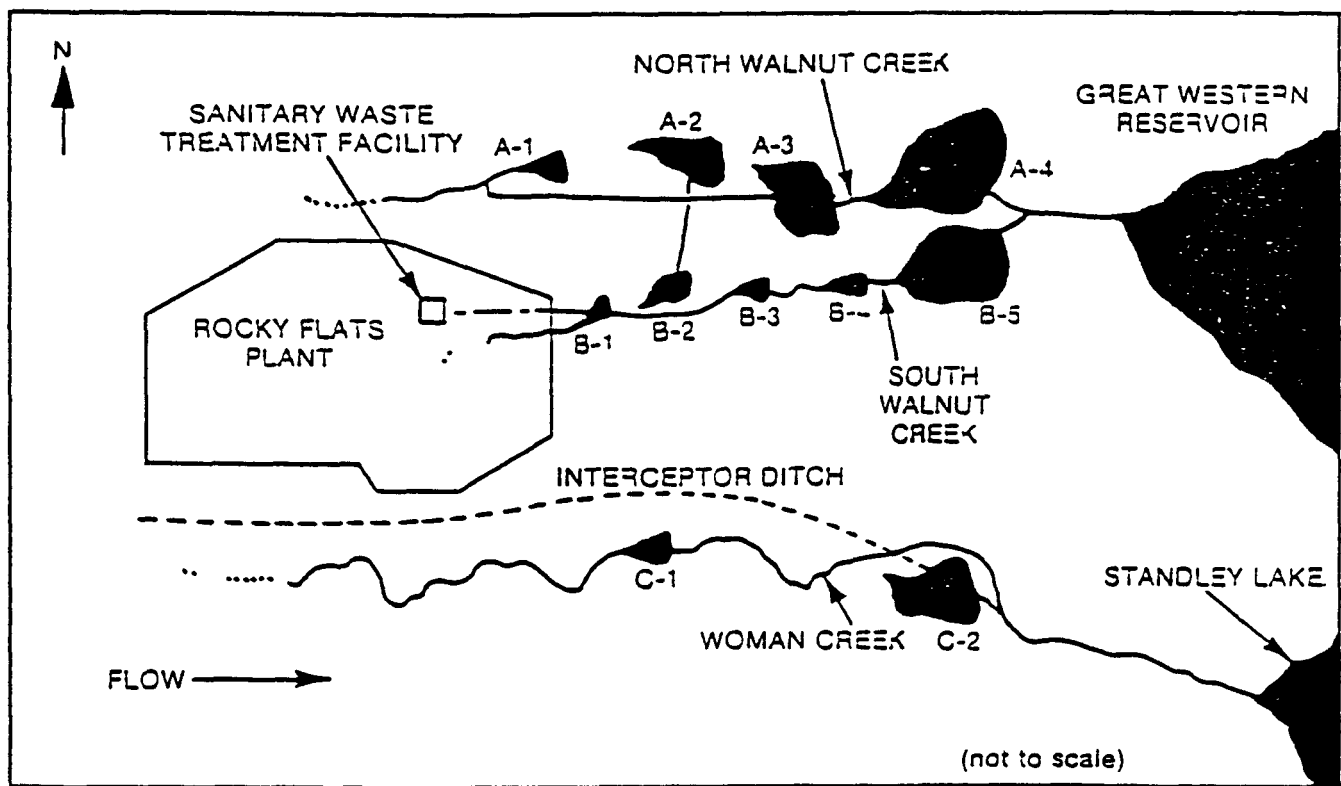
cc: Mayor
City Council Members

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APPENDIX B

MAPS SHOWING THE LOCATION OF
ROCKY FLATS PLANT AND SURROUNDING COMMUNITIES,
HOLDING PONDS AND LIQUID EFFLUENT WATERCOURSES, AND
AREA GEOGRAPHY AROUND THE PROPOSED ACTION





Holding Ponds and Liquid Effluent Watercourses

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AREA GEOGRAPHY

